In the Claims

~~CLAIMS~~THE INVENTION CLAIMED IS:

1. (Original) A method of detecting single frequency and dual frequency signalling tones incorporated in communications voice traffic, the method comprising determining a mean frequency for said traffic via an automatic frequency control circuit, comparing said mean frequency with stored frequency values corresponding to single tone signalling frequencies and mean values of pairs of dual tone signalling frequencies, and, when a frequency match is determined by said comparison, confirming that match by determining whether said traffic incorporates a single or dual frequency signal.

2. (Original) A method as claimed in claim 1, wherein said single tones comprise continuity test (COT) tones and modem tones.

3. (Original) A method as claimed in claim 2, and further comprising detecting phase reversals in a tone identified as a modem tone,

4. (Original) A method as claimed in claim 3, wherein said phase reversals are detected via a phase locked loop.

5. (Original) A method as claimed in claim 4, wherein said detection of single and dual tone signals is effected from real and imaginary signal components.

6. (Original) A method of controlling echo cancellation in a communications network carrying voice traffic incorporating single frequency and dual frequency signalling tones, the method comprising determining a mean frequency for said traffic via an automatic frequency control circuit, comparing said mean frequency with stored frequency values corresponding to single tone signalling frequencies and mean values of pairs of dual tone signalling frequencies, when a frequency match is determined by said comparison, confirming that match by determining whether said traffic incorporates a single or dual frequency signal, and disabling said echo cancellation responsive to the detection of that single or dual frequency signal.

7. (Original) A method as claimed in claim 6, wherein said single tones comprise continuity test (COT) tones and modem tones.

8. (Currently Amended) A method as claimed in claim 7, and further comprising detecting phase reversals in a tone identified as a modem tone.

9. (Original) A method as claimed in claim 8, wherein said phase reversals are detected via a phase locked loop.

10. (Original) A method as claimed in claim 9, wherein said detection of single and dual tone signals is effected from real and imaginary signal components.

11. (Original) A method as claimed in claim 6, and embodied as software in machine readable form on a storage medium.

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12. (Currently Amended) A signalling tone detector for use in a communications network carrying voice traffic incorporating single frequency and dual frequency signalling tones, the tone detector comprising; an automatic frequency control circuit for determining a mean frequency of an input signal, comparison means for comparing said mean frequency with stored frequency values corresponding to single tone signalling frequencies and mean values of pairs of dual tone signalling frequencies, first discrimination means for determining the presence of either a single frequency or a pair of frequencies, and second discrimination means responsive to said first discrimination means and said comparison means for providing a signal output indicative of the presence of [[a]] said single frequency or pair of frequencies.

13. (Currently Amended) A tone detector as claimed in claim 12, and incorporating means for generating real and imaginary components from ~~an~~ said input signal.

14. (Original) A tone detector as claimed in claim 13, and incorporating phase locked loop means for detecting phase reversals in modem signalling tones.

15. (Currently Amended) A signalling tone detector for use in a communications network carrying voice traffic incorporating single frequency and dual frequency

signalling tones, the tone detector comprising; a first output path, a second output path, and a switch arranged to selectively couple an input signal to one or other of the output paths, wherein said first output path comprises an automatic frequency control circuit for determining a mean frequency of an input signal, comparison means for comparing said mean frequency with stored frequency values corresponding to single tone signalling frequencies and mean values of pairs of dual tone signalling frequencies, first discrimination means for determining the presence of either a single frequency or a pair of frequencies, and second discrimination means responsive to said first discrimination means and said comparison means for providing a signal output indicative of the presence of [[a]] said single frequency or pair of frequencies, and wherein said second output path comprises a phase locked loop arranged to respond in frequency and phase to modem signalling tones and output means responsive to the presence or absence of phase reversals in [[a]] said modem signalling tone.

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16. (Original) A signalling tone detector as claimed in claim 15, wherein the input to said switch comprises real and imaginary signal components generated by a Hilbert transformer.

17. (Currently Amended) An echo canceller arrangement for use in a communications network carrying voice traffic incorporating single frequency and dual frequency signalling tones, the arrangement comprising an echo canceller circuit, and a signal tone detector arranged to selectively disable the echo canceller in the presence of predetermined signalling tones, wherein the tone detector comprises an automatic frequency control circuit for determining a mean frequency of an input signal, comparison means for comparing said mean frequency with stored frequency values corresponding to single tone signalling frequencies and mean values of pairs of dual tone signalling frequencies, first discrimination means for determining the presence of either a single frequency or a pair of frequencies, and second discrimination means responsive to said first discrimination means and

said comparison means for providing a signal output indicative of the presence of [[a]] said single frequency or pair of frequencies.

18. (Original) An ATM switch incorporating an echo canceller arrangement as claimed in claim 17.

19. (Original) An arrangement as claimed in claim 17, wherein said echo canceller is disposed at the boundary between a time division multiplex network and a connectionless network.

20. (Currently Amended) A communications system comprising a circuit based time division multiplex (TDM) network carrying voice traffic and audio tone signalling traffic, a connectionless network in which traffic is transported in cells, and an interface between said TDM and connectionless networks, wherein said interface incorporates an echo canceller arrangement comprising an echo canceller circuit, and a signal tone detector arranged to selectively disable the echo canceller in the presence of predetermined signalling tones, wherein the tone detector comprises an automatic frequency control circuit for determining a mean frequency of an input signal, comparison means for comparing said mean frequency with stored frequency values corresponding to single tone signalling frequencies and mean values of pairs of dual tone signalling frequencies, first discrimination means for determining the presence of either a single frequency or a pair of frequencies, and second discrimination means responsive to said first discrimination means and said comparison means for providing a signal output indicative of the presence of [[a]] said single frequency or pair of frequencies.

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